

# Claims

- [c1] 1. A method for identifying product assets in a supply chain used to satisfy customer demands, comprising:  
receiving a feasible schedule of all components to be assembled into products;  
receiving customer schedules for delivery of said products; and  
generating from said feasible schedule, from said customer schedules and from bills of materials listing all components required for a particular product, a set of demand pegging records, said demand pegging records associating a quantity and an availability date of each component of each product with a required quantity of each of said products, each demand pegging record consistent with said feasible schedule.
- [c2] 2. The method of claim 1, wherein at least some of said components may be assembled from other of said components.
- [c3] 3. The method of claim 1, wherein at least some of said components are common to one or more of said products.

- [c4] 4. The method of claim 1, wherein at least some of said components are binned components that are sorted to different specifications from a common component.
- [c5] 5. The method of claim 4, further including:  
generating additional demand pegging records for unused binned components that are available in quantities in excess of those required for assembly of said products.
- [c6] 6. The method of claim 1, further including:  
assigning each component and product a low-level-code indicating a sequence in which said components are assembled into said products; and  
generating said demand pegging records in low-level-code sequence from a lowest low-level-code assigned to completed products to a highest low level code assigned to a starting component of a completed product.
- [c7] 7. The method of claim 1, wherein said feasible schedule includes one or more schedules selected from the group consisting of schedules for components from multiple sources, schedules for substitute components for at least some of said components, schedules for inter-source shipments of at least some components and schedules

for sorted components that are that are sorted into two or more different part-numbers.

- [c8] 8. A method for identifying product assets in a supply chain used to satisfy customer demands, comprising:
- (a) mapping a planned inventory requisition file comprising component availability schedules and a customer demand file comprising product shipment schedules for products assembled from components into a requisition map file associating said component availability schedules and said product shipment schedules and including quantities of each component to be used for each product, each component and product having a low-level-code indicating a sequence in which said components are assembled into said products and each product and component having a unique part-number;
  - (b) selecting all records from said requisition map file of components or products having low-level codes equal to a current low-level-code;
  - (c) selecting, from a planned asset file comprising component schedules, records having part numbers equal to the part numbers in the records selected in step (b);
  - (d) selecting, from said planned inventory requisition file, records having part numbers equal to the part

numbers in the records selected in step (b);

(e) mapping records selected in steps (c) and (d) into a coverage file associating component availability with component requirements for each product;

(f) mapping said coverage file and records of corresponding part numbers from said requisition map file into a demand pegging output file comprising demand pegging output records, said demand pegging records associating a quantity and an availability date of each component required to produce a required quantity of each of said products, each demand pegging record consistent with said feasible schedule;

(g) generating additional records in said requisition map file for components required to fabricate products whose records were mapped into said demand pegging output file in step (f); and

(h) incrementing the current low-level-code and repeating steps (b) through (h) until the current low-level code is higher than a highest low-level-code of any component or product.

[c9] 9. The method of claim 8, wherein said planned inventory requisition file and said planned asset file are generated by a production-scheduling run using said customer demand file as an input to said production-

scheduling run and said planned inventory requisition file and said planned asset file comprise feasible schedules.

[c10] 10. The method of claim 9, wherein said planned inventory requisition file and said planned asset file include one or more schedules independently selected from the group consisting of schedules for components from multiple sources, schedules for substitute components for at least some of said components, schedules for inter-source shipments of at least some components and schedules for sorted components that are that are sorted into two or more different part-numbers.

[c11] 11. The method of claim 8, wherein step (g) includes:

- (i) selecting from said demand pegging output file all records of components having a planned release into manufacturing at a date later than a date that said planned inventory requisition file was generated;
- (ii) mapping records selected in step (i) to a bill of materials listing all components required for a particular product; and
- (iii) generating additional records in said requisition map file for components required to fabricate components whose records were selected in step (i).

[c12] 12. The method of claim 11, further including:

(iv) selecting all records generated in step (iii) that are for binned components, a binned component defined as a component derived from a common component by sorting said common component to two or more different specifications; and

(v) adding an additional record to said requisition map file for each unused quantity of each binned component available in excess of a quantity required for assembly of quantities of products using said binned components.

[c13] 13. The method of claim 12, further including:  
calculating the quantity of each common component required by taking the maximum of the quantity required of each binned component divided by a sort percentage for each binned component sorted from said common component.

[c14] 14. The method of claim 8, further including, wherein step (a) further includes:  
generating and assigning said low-level-codes to each component and product.

[c15] 15. A computer system comprising a processor, an address/data bus coupled to said processor, and a computer-readable memory unit adapted to be coupled to said processor, said memory unit containing instructions

that when executed by said processor implement a method for identifying product assets in a supply chain used to satisfy customer demands, said method comprising the computer implemented steps of:

receiving a feasible schedule of all components to be assembled into products;

receiving customer schedules for delivery of said products; and

generating from said feasible schedule, from said customer schedules and from bills of materials listing all components required for a particular product, a set of demand pegging records, said demand pegging records associating a quantity and an availability date of each component of each product with a required quantity of each of said products, each demand pegging record consistent with said feasible schedule.

[c16] 16. The system of claim 15, wherein at least some of said components may be assembled from other of said components.

[c17] 17. The system of claim 15, wherein at least some of said components are common to one or more of said products.

[c18] 18. The system of claim 15, wherein at least some of

said components are binned components that are sorted to different specifications from a common component.

- [c19] 19. The system of claim 18, further including:  
generating additional demand pegging records for unused binned components that are available in quantities in excess of those required for assembly of said products.
- [c20] 20. The system of claim 15, further including:  
assigning each component and product a low-level-code indicating a sequence in which said components are assembled into said products; and  
generating said demand pegging records in low-level-code sequence from a lowest low-level-code assigned to completed products to a highest low level code assigned to a starting component of a completed product.
- [c21] 21. The system of claim 15, wherein said feasible schedule includes one or more schedules selected from the group consisting of schedules for components from multiple sources, schedules for substitute components for at least some of said components, schedules for inter-source shipments of at least some components and schedules for sorted components that are that are sorted into two or more different part-numbers.



[c22] 22. A computer system comprising a processor, an address/data bus coupled to said processor, and a computer-readable memory unit adapted to be coupled to said processor, said memory unit containing instructions that when executed by said processor implement a method for identifying product assets in a supply chain used to satisfy customer demands, said method comprising the computer implemented steps of:

(a) mapping a planned inventory requisition file comprising component availability schedules and a customer demand file comprising product shipment schedules for products assembled from components into a requisition map file associating said component availability schedules and said product shipment schedules and including quantities of each component to be used for each product, each component and product having a low-level-code indicating a sequence in which said components are assembled into said products and each product and component having a unique part-number;

(b) selecting all records from said requisition map file of components or products having low-level codes equal to a current low-level-code;

(c) selecting, from a planned asset file comprising component schedules, records having part numbers

equal to the part numbers in the records selected in step (b);

(d) selecting, from said planned inventory requisition file, records having part numbers equal to the part numbers in the records selected in step (b);

(e) mapping records selected in steps (c) and (d) into a coverage file associating component availability with component requirements for each product;

(f) mapping said coverage file and records of corresponding part numbers from said requisition map file into a demand pegging output file comprising demand pegging output records, said demand pegging records associating a quantity and an availability date of each component required to produce a required quantity of each of said products, each demand pegging record consistent with said feasible schedule;

(g) generating additional records in said requisition map file for components required to fabricate products whose records were mapped into said demand pegging output file in step (f); and

(h) incrementing the current low-level-code and repeating steps (b) through (h) until the current low-level code is higher than a highest low-level-code of any component or product.

[c23] 23. The system of claim 22, wherein said planned inventory requisition file and said planned asset file are generated by a production-scheduling run using said customer demand file as an input to said production-scheduling run and said planned inventory requisition file and said planned asset file comprise feasible schedules.

[c24] 24. The system of claim 23, wherein said planned inventory requisition file and said planned asset file include one or more schedules independently selected from the group consisting of schedules for components from multiple sources, schedules for substitute components for at least some of said components, schedules for inter-source shipments of at least some components and schedules for sorted components that are that are sorted into two or more different part-numbers.

[c25] 25. The system of claim 22, wherein step (g) includes:

- (i) selecting from said demand pegging output file all records of components having a planned release into manufacturing at a date later than a date that said planned inventory requisition file was generated;
- (ii) mapping records selected in step (i) to a bill of materials listing all components required for a particular product; and
- (iii) generating additional records in said requisition

map file for components required to fabricate components whose records were selected in step (i).

- [c26] 26. The system of claim 25, further including:
- (iv) selecting all records generated in step (iii) that are for binned components, a binned component defined as a component derived from a common component by sorting said common component to two or more different specifications; and
  - (v) adding an additional record to said requisition map file for each unused quantity of each binned component available in excess of a quantity required for assembly of quantities of products using said binned components.
- [c27] 27. The system of claim 26, further including:
- calculating the quantity of each common component required by taking the maximum of the quantity required of each binned component divided by a sort percentage for each binned component sorted from said common component.
- [c28] 28. The system of claim 22, further including, wherein step (a) further includes:
- generating and assigning said low-level-codes to each component and product.

[c29] 29. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for identifying product assets in a supply chain used to satisfy customer demands said method steps comprising:

receiving a feasible schedule of all components to be assembled into products;

receiving customer schedules for delivery of said products; and

generating from said feasible schedule, from said customer schedules and from bills of materials listing all components required for a particular product, a set of demand pegging records, said demand pegging records associating a quantity and an availability date of each component of each product with a required quantity of each of said products, each demand pegging record consistent with said feasible schedule.

[c30] 30. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for identifying product assets in a supply chain used to satisfy customer demands said method steps comprising:

(a) mapping a planned inventory requisition file comprising component availability schedules and a cus-

customer demand file comprising product shipment schedules for products assembled from components into a requisition map file associating said component availability schedules and said product shipment schedules and including quantities of each component to be used for each product, each component and product having a low-level-code indicating a sequence in which said components are assembled into said products and each product and component having a unique part-number;

(b) selecting all records from said requisition map file of components or products having low-level codes equal to a current low-level-code;

(c) selecting, from a planned asset file comprising component schedules, records having part numbers equal to the part numbers in the records selected in step (b);

(d) selecting, from said planned inventory requisition file, records having part numbers equal to the part numbers in the records selected in step (b);

(e) mapping records selected in steps (c) and (d) into a coverage file associating component availability with component requirements for each product;

(f) mapping said coverage file and records of corresponding part numbers from said requisition map file into a demand pegging output file comprising

demand pegging output records, said demand pegging records associating a quantity and an availability date of each component required to produce a required quantity of each of said products, each demand pegging record consistent with said feasible schedule;

(g) generating additional records in said requisition map file for components required to fabricate products whose records were mapped into said demand pegging output file in step (f); and

(h) incrementing the current low-level-code and repeating steps (b) through (h) until the current low-level code is higher than a highest low-level-code of any component or product.